Education by Visualization

The Royal Road to Learning
Lies Along The Film Highway

Children Acquire Seventy-Five Per Cent of Their Education Through Their Eyes

It has long been known that children acquire more knowledge through their eyes than by means of all their other senses. As a result of this knowledge, educators and scientists have been making exhaustive experiments whereby visual instruction could be given to children in public schools at a nominal cost. They realized that it was impossible to take the children out to the factories, to the farms and into other countries to actually see and learn about the various industries of our own and other nations. They also realized that it is absolutely impossible to bring all of these into the school room, except through pictures. This was done. Our school books were filled with pictures, and lantern slides were provided so that pictures could be thrown on the screen even in natural colors.

These methods and appliances were good, but still they did not create interest, or arouse the enthusiasm of the teacher or pupil. They were all looking for and demanding something more real, something that had in it the touch of real life, real action. They wanted to see the factory wheels turning, the raw material being mined and passing through its various processes of manufacture until it came out a finished product. They wanted to see while these processes of transformation were taking place. They wanted to see the difficult and costly experiments being made by our greatest scientists. They wanted to see with their own eyes, by means of the X-Ray and the powerful microscope, the living blood flowing through the arteries and veins and through the capillaries of the lungs to be purified. They wanted to see the heart perform its function, the stomach digest its food. They wanted to see the experiments with liquid air, with a temperature 200 degrees below zero.

All of this and more they wanted to see and the teacher realized that seeing is the only means by which many subjects can be successfully taught. Modern science and invention have made this possible. Even the smallest and poorest schools can now take the child into every part of the world and show him real life in action of almost everything that exists, or that can be seen with the eye.

"What a man does not see, what he does not live, he will not know."—Ralph Waldo Emerson, "Essay on History."

Even With Visual Aids Attention and Interest Are First Essentials

Every teacher knows that in order to show the most satisfactory results in the education of the children under her care she must be able to secure their whole attention, which can only be brought about by making the subjects to be taught so attractive that the children will voluntarily and unconsciously become interested. This is often a difficult problem and not infrequently exhausts the teacher's store of tactful methods without bringing about the desired results. The subject, "how to arouse and hold the pupil's interest," has probably consumed more time at teachers' institutes and educational gatherings than all other subjects combined, confirming our statement that "To teach successfully you must get the pupil's interest."

Nothing interests the pupil so much as real life. He cares very little about the tiger skin on the parlor floor or the picture of the roaring lion hanging in father's den, but the morning the circus comes to town he is the first to awaken. Long before the street lights are out you will find him watching eagerly the hustle and bustle of transferring the circus from the trains to the big tents. You find him carrying bucket after bucket of water and running hundreds of errands for the privilege of seeing a real *live* tiger and a real *live* lion.

Of course you cannot bring the circus into the classroom. Even if you could, the number of subjects you could teach by means of this visual aid would be very limited. But you can bring into the classroom by means of *Motion Pictures* almost everything known to man. No matter what the subject may be, you already have the pupil's interest and his undivided attention the moment you turn off your light and start the picture going.

A Motion Picture creates thought as no other visual aid can, and to get the best results from teaching, the child must be taught to think.

With a still picture, he too often takes a casual glance and then his thoughts wander away to something more real. By the time the next picture is shown his mind is on something entirely foreign to what you are trying to impress upon him. Not so with the Motion Picture, as you know from your own experience. The pictures being projected on the screen change the scene so rapidly that he does not dare to take his eyes off the screen for fear he will lose some part of this reproduced life in motion. It not only creates interest and holds his undivided attention at the time, but it teaches him to be observing at all times. Life, action, motion, this is what interests both pupil and teacher.

No matter how many times you may have read your Shakespeare, Stevenson, Eliot or Poe, have you not sat in a Motion Picture theatre watching closely, with the greatest interest, the reproductions on the screen in Motion Pictures of "Macbeth," "Treasure Island," "Adam Bede," or "The Raven"? It is only natural then that the Motion Picture should be brought into the classroom to teach almost every subject and that the greatest educators and the greatest educational organizations in America should endorse the Motion Picture, because with it the interest is already created.

"The educational Motion Picture means a revolution in pedagogy. It means vividness where vagueness has reigned." David Starr Jordan.

THE PATHÉSCOPE IN THE CLASS-ROOM
Studying "Physical Movements Analyzed."

Motion Pictures in the Schools

Every teacher who reads these words has probably said after seeing some remarkably interesting or instructive Motion Picture: "If we could only get the Motion Picture Machine into the School Room and make it serve our purpose, what wonders we could accomplish with it! How it would interest the children in many of the little-understood subjects that cannot be easily described in print or shown in an illustration, but can be clearly and simply shown in a Motion Picture, from which they are instantly grasped and never forgotten by the *interested scholar.*"

No other medium can convey an intelligent conception of the

"Within the next decade the Moving Picture will be the indispensable adjunct of every teacher. As the attention and interest of educators are more and more drawn to its merits, the future usefulness of the educational cinematograph bids fair to surpass the predictions of its most sanguine advocates."—From Report of the U. S. Department of Education.

countless thousands of mechanical operations, plant developments, animal growths and transformations, chemical combinations, etc., which heretofore have not been clearly demonstrable by either printed description or static illustration.

The Motion Picture, projected in living, fascinating action on the screen, shows every process of change in a way best calculated to be successfully analyzed and indelibly impressed on the youthful mind.

Impartial Test Proves Motion Pictures Best Aid to Visual Instruction

The School District of the City of Erie, Pa.
McKinley Public School

The Pathéscope Company.

Gentlemen: You will be interested in the results of an experiment conducted in several classes of our school a month ago. **We wished to discover the relative values of the Stereopticon and the Pathéscope for educational purposes.** We also aimed to discover under what conditions a picture machine would bring the best results with a class of children.

Our subjects were four classes in McKinley Grammar School—

Class 1, consisting of 43 pupils whose average age was 12¾ years and who were doing the work of the 6A grade;

Class 2, 33 pupils, average age 13¼ years, doing 7B grade work;

Class 3, 26 pupils, average age 13 1/3 years, doing 7A grade work;

Class 4, 30 pupils, average age 14 1/3 years, doing 8A grade work.

The Silk Industry was the topic used with all the classes. For three days before the pictures were presented, the pupils of Class 2 and Class 3 were given careful oral instruction on the subject. Then Class 2 spent four daily half-hour periods with the Pathéscope reel. One-third of the reel was presented at a time with careful explana-

tion of everything in the pictures as they were being presented. On the fourth day the whole reel was given as a review, without any accompanying explanation.

The same general plan was followed with Class 3 except that they were given Stereopticon slides in three installments, and a review on the fourth day.

Class 1 had no instruction on the subject beforehand. They were given the whole reel in one 45 minute period with careful explanation of the pictures while they were being presented.

Class 4 was given no special preparation beforehand, though the production of raw silk and its manufacture is treated in more or less detail in various parts of the geography they have been studying for the past three years. With this class the entire reel was presented with no explanation, except that the teacher read aloud from the screen the statements that are made at frequent intervals in the reel.

At the close of the experiment all the pupils were asked to write the story of the Silk Industry.

PATHÉSCOPE VS. STEREOPTICON

Class 2, using Pathéscope Motion Pictures, did best of all, their standings all ranging between 78% and 98%, with four-fifths of the class above 85%.

Class 3, using Stereopticon slides, came third, with standings between 50% and 90%, with but three members of the class above 85%.

ORAL INSTRUCTION VS. NO ORAL INSTRUCTION

Class 1, receiving oral instruction with pictures, ranked second, with standings between 70% and 95%, one-half the pupils above 85%.

Class 4, using pictures without oral instruction, ranked fourth, with standings between 25% and 80%, only one-half of the class above 50%.

Accuracy of description and account was the only standard used in grading the stories written by the children.

Very truly yours,

Zoe I. Hirt, *Principal.*

Arthur Brisbane says of the Motion Picture: "It is the only possible method of reaching the human mind directly and effectively, regardless of that mind's intellectual training."

THE PATHÉSCOPE IN THE ASSEMBLY ROOM
Reviewing "Les Miserables."

Difficulties Encountered With Ordinary Equipment

The manifest advantages of the Motion Pictures in the schools have led to some installations of the professional apparatus, such as is used in the picture theatres.

But the Standard Motion Picture Machine is not only an expensive and complicated device, but it requires an experienced operator, an expensive electric equipment and a permanent installation in a fireproof booth. It involves a lot of restrictions imposed by building committees, insurance underwriters and city fire authorities. Above

all, it involves the use of a highly inflammable film in such close proximity to the intense heat of an arc lamp that the pupils are continually exposed to the danger of frightful accidents as a result of the slightest carelessness in operation. Decidedly the objections outweighed the advantages.

The Pathéscope Has Solved the Problem

The Pathéscope is an extremely compact, high power Motion Picture projector using an incandescent lamp of extreme brilliancy, which, by means of a specially constructed condensing system, throws a bright, clear, flickerless picture the full length of any school, hall or auditorium, making a picture of any size up to that shown in Motion Picture theatres.

It attaches by means of a cord and plug to any ordinary electric light socket of either alternating or direct current or it can be operated perfectly on any 16 volt storage battery, or on 10 to 15 dry cells.

The Pathéscope is so simple in construction that it is being successfully operated by the pupils themselves in hundreds of Public, Graded and High Schools, and Parochial Schools, while the teacher gives any necessary additional comments or correlative information.

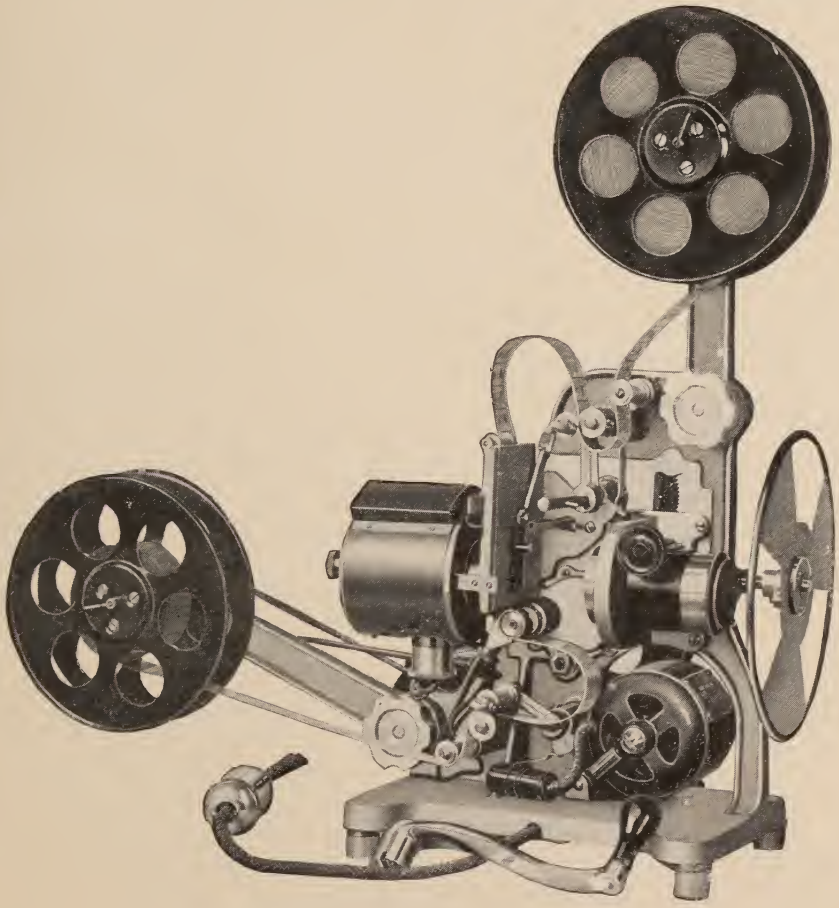
No Fire Risk—No Insurance Restrictions

The Pathéscope is the only *absolutely safe* machine, not only on account of its incandescent light, but also because it uses only the famous Pathé acetate of cellulose *Non-Inflammable Film,* approved everywhere by Insurance authorities and Fire Commissioners.

This film is made in a special narrow width for the Pathéscope, and in first cost and Exchange service is much less expensive than the common standard celluloid film, which ignites almost like gunpowder and the use of which is naturally attended with many restrictions and dangers.

By Pathéscope Pictures

There are now in use more than 10,000 Pathéscopes of the original models invented and manufactured by Pathé Freres in Paris. In this, the fifth edition of our Education by Visualization, the Pathéscope Co. of America, Inc., offers for the first time the successful combination of French mechanical ingenuity and American manufacturing methods as embodied in the **New Premier Pathéscope,**— a projector of marvelous mechanical precision, with a screen picture closely approaching perfection.



The New Premier Pathéscope

Without going into a scientific and technical explanation of the **New Premier Pathéscope**, we will mention just three points of convincing superiority.

First—by its exclusive illuminating system, it produces on the screen approximately ten times as much illumination for each watt burned in its lamp, as the next most efficient method of illumination employed on any other machine.

Second—while the three best known professional projectors used in Motion Picture theatres utilize only 32%, 38% and 47% respectively, of the light illuminating the film, the **New Premier Pathéscope** utilizes 62½%.

Third—with every other projector, there is a very appreciable flicker, while the **New Premier Pathéscope** projects an absolutely flickerless picture, even in the light parts of the screen such as sky, snow or water.

It is an ideal instrument for class-room work, the hum of the motor being practically the only sound heard. Any one familiar with other projectors having the films enclosed and hard to thread or get at, will appreciate the accessibility of every part of the **New Premier Pathéscope.**

As the machine weighs less than 20 pounds for hand operation, and 23 pounds with motor drive, it is very easily carried from one room to another and operated from any desk or table.

While the use of ordinary Motion Picture projectors makes necessary a fireproof booth and a licensed operator, with a far more expensive film service, the **New Premier Pathéscope** has none of these restrictions.

Every **New Premier Pathéscope** *carries the Underwriters' Laboratories Approved Inspection Label—*
"ENCLOSING BOOTH NOT REQUIRED."
Look for this label if you would avoid insurance and municipal annoyances, restrictions and expenses.

For the benefit of the technical reader we submit the following brief:

SPECIFICATIONS

1. FRAME and SUPPORTS—All of cast aluminum, light but strong.
2. GEARS—Large of bronze, meshing into small of steel, all 32-pitch, helical cut, with broad faces, insuring quiet running and long life. Enclosed for protection in easily removed casing.
3. SHAFTS—All steel of large diameter with long bearings. Star and cam shafts have special bearings, reamed and lapped to one quarter of a thousandth of one inch.
4. INTERMITTENT MOVEMENT—Exclusive "Premier" design, modified star and cam in oil-tight casing, eccentrically adjustable for wear. Cam action of 60 degrees, giving speed ratio of 5 to 1 without film injury.
5. LENSES—Standard Motion Picture tubes of any focal length in standard rack and pinion focusing mounts.
6. MOTOR-DRIVE—Direct and rewind by Westinghouse Universal motor, running at comparatively uniform rate of speed on both alternating and direct current of 110 to 120 volts; gravity suspension maintains constant belt tension independent of stretch. Instantly disconnected for crank drive where electric current is lacking.
7. ILLUMINATION—Pathéscope exclusive system, using specially designed 14-volt, 2 ampere, argon gas-filled high efficiency incandescent lamp in special adjustable socket with self-centering support. Mirror reflector in focusing mount. French condensers, meniscus bi-convex triple combination, the most efficient known.
8. LUBRICATION—Automatic, requiring attention only once or twice a year of ordinary use.
9. FRAMING—Automatic, by patented perforations in Pathéscope film. An adjustment of the aperture mask is also provided to instantly correct films printed slightly out of frame.
10. SIZE—With reel arms folded and current wiring attached, outside dimensions are 13 inches long, 8 inches wide and 13 inches high; no baseboard; rubber typewriter feet.
11. WEIGHT—With motor, 23 pounds.
12. FINISH—Dead black baked enamel with polished nickel trimmings.

A PATHÉSCOPE FILM EXCHANGE

Pathéscope Film Library

All on Underwriters' Approved and Inspected Slow-Burning Film.

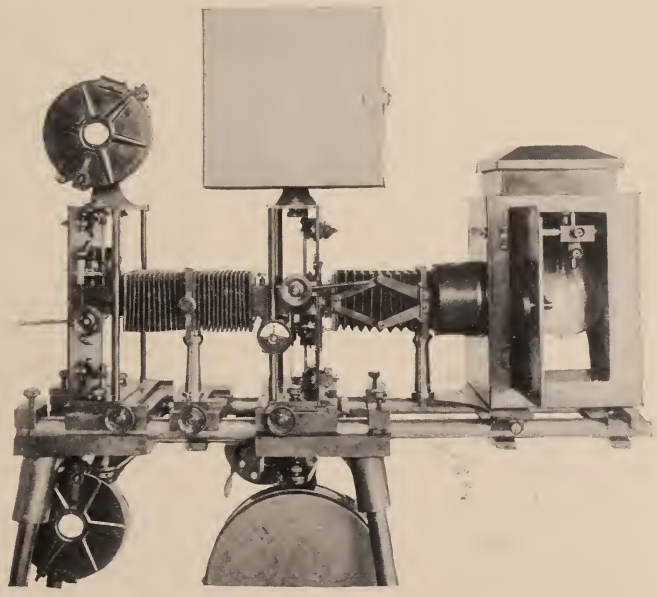
The Pathéscope Film Library for educational and entertainment purposes is the largest of its kind in the world, including not only

the choicest educational subjects of Pathé Freres of Paris, the largest Motion Picture house in the world, but it also includes the best of other film producing companies, which we are able to reproduce for use on the Pathéscope because we do not enter into competition with Moving Picture houses.

As the best evidence of our ability to satisfy any exacting requirements, we point with pride and satisfaction to our contracts for the past three years for Pathéscope Film Service with the New York Board of Education for use in over 100 of the Public Schools of New York and Brooklyn, equipped with Pathéscopes of the older model.

Similar service has also been rendered by Pathéscope Branch Exchanges in the Public Schools of many other cities.

Send for our booklets, *"Endorsements of the Educational Efficiency of the Pathéscope,"* and *"List of Educational Film."*



A Pathéscope Copying Machine.

Our Laboratory contains a number of these machines, used in making Pathéscope reproductions of Standard Films.

Education Without Effort

Some idea of the amazing number and variety of subjects *already available* (January, 1918) in the Pathéscope Film Library may be gathered from the following schedule reprinted here from our 132 page, cloth-bound **Descriptive Catalogue of Pathéscope Films,** which is furnished gratis to every Pathéscope owner. It contains the largest assortment of films ever offered for universal use.

Class	*Subject*	*Number Listed*
1.	Travel, Hunting, Manners and Customs	136
2.	Industries, Forestry, Agriculture	78
3.	Popular Science, Natural History	77
4.	Topical and War	70
5.	Fairy and Trick Scenes	35
6.	Comic Scenes	51
7.	Vaudeville	37
8.	Comedies	189
9.	Dramas	169
10.	Religious and Biblical Scenes	23
11.	Reconstructed History	16
12.	Military Sports	11
13.	Detective Stories	27
14.	Animated Cartoons	16
	Total number subjects	935

Additional subjects are being added to the above list (which comprises over 1,200 reels) at the rate of five or more reels per week. Supplementary catalogues will be issued as required.

LABORATORY—LONG ISLAND CITY.

DEPARTMENT OF EDUCATION
CITY OF NEW YORK

BOARD OF EDUCATION CITY OF NEW YORK

Board of Education
Park Avenue and 59th Street

New York Dec 1st, 1915

Frank D. Wilsey,
No 69 West Street.

SUBJECT-Use of Motion Picture Machines in School Buildings.

The Pathescope Co of America, Inc
33 West 42nd St, Manhattan.

It is now about a year since the first Pathescope Motion Picture Machines were installed in the New York Schools, and as a result of a thorough examination of the instrument and it's non-inflammable film by our Electrical Department, it has been approved for installation without booth or licensed operator in the schools of New York City.

During the past year over one hundred Pathescope Projectors have been installed in as many different public schools of New York City, and as a result of their satisfactory use the Building Committee has not since felt warranted in incurring the much greater expense formerly involved in the installation, in our existing school buildings, of fire-proof booths and other equipment essential to the safe operation of the large Standard Motion Picture Machines.

Since the installation of the Pathescopes, the Board Of Education has included in it's recent budget an appropriation of $7,500,00 for Film Service in this City. This is the first year that an appropriation of this kind has been made in New York City.

The cost of Pathescope Film Service is so much less than that of the Standard machines as to enable the schools to make practical weekly use of this instrument, where on the other hand the greater cost of operation and film service with the Standard machines would permit their use only at much greater intervals.

Another desirable feature that we have found is the ability to use Pathescopes with a small and inexpensive Storage Battery in any school lacking electrical equipment. This has been of great value in many of our older school buildings which are illuminated only by gas

Very truly yours

Frank D Wilsey

CHAIRMAN, COMMITTEE ON BLDGS

20 YEARS OF CINEMA SUPREMACY KOK

Pathéscope Literature

Furnished upon Application

1. **The Pathéscope:**
   A twenty-four page catalogue describing in detail all Models of the Pathéscope, the Pathéscope Camera, and a price list in detail of all Instruments and Accessories, Film Service, etc.
2. **Prominent Users:**
   An eight page folder containing a list of prominent private owners of the Pathéscope, also of Institutions, Schools, Churches, Clubs and Camps, Hotels, and Industrial Firms which use the Pathéscope. The most convincing proof of deserved and achieved success.
3. **List of Pathéscope Films:**
   Containing over 1,200 available reels of fourteen different classifications. Supplementary lists being also continually published.
4. **Education by Visualization:** (This Booklet)
   A sixteen page descriptive booklet now in its fifth edition, devoted to the Educational uses of the Pathéscope. Over 100,000 have been printed and distributed.
5. **Safety First:**
   A twenty page booklet, containing tests and reports with resulting approval, of Pathéscope Film by the Underwriters' Laboratories, Detroit Testing Laboratories, Municipal Explosives Commission, Bureau of Explosives, etc., with endorsements of various Municipal and Insurance authorities.
6. **Descriptive Catalogue of Pathéscope Films:**
   A 132-page, cloth-bound book containing full descriptions of nearly 1,000 subjects (over 1,200 reels) sub-divided into fourteen classes according to the nature of the subjects illustrated. Furnished to every Pathéscope owner. Additional copies at 50 cents each.
7. **List of Educational Films for the Pathéscope:**
   Prepared for the educator and containing the educational films only, from No. 3 above, together with eight sample pages from No. 6 above.
8. **How the Pathéscope Brought Prosperity to Our House:**
   As told by the Manager of the successful Hotel, which used a Pathéscope to entertain its guests.
9. **Les Miserables:**
   A six page leaflet with illustrations of the stars and various episodes in this marvelous Pathéscope production of Victor Hugo's deathless masterpiece, which is complete in twenty reels.
10. **Fac-Simile Letters:**
    Loose-leaf testimonials from pleased owners of the Pathéscope, in every branch of its usefulness: Schools, Churches, Manufacturers, Hotels, Institutions.

THE PATHÉSCOPE CO. OF AMERICA
AEOLIAN HALL, NEW YORK

COPY

OFFICE OF PRINCIPAL
OAKLEY SCHOOL
CINCINNATI.

July 15, 1919.

Mr. Leonard Campbell,
Bobbs-Merrill Bldg.,
Indianapolis, Ind.

Dear Sir:

In reply to your inquiry concerning the use of the Pathescope in our school and community work, I will say that at first I was not in favor of purchasing one. I had had considerable experience with projection apparatus in school work and I did not see how an incandescent bulb would furnish the proper illumination. We finally ordered one, however, and I was agreeably surprised to find that we could use our regular stereoptican screen with a good brilliant picture.

Another misgiving that I had was that pupils, accustomed as they were to the standard reels used in the neighboring moving picture show, would take little or no interest in the Pathescope films. Here again I found my mistake. Our pupils enjoy the Pathescope selections much more than the standard film.

In our community center work I find that adults wish to be amused, not educated. They enjoy the comedy films and are well satisfied. However, I succeeded in getting quite a large assemblage of church people together one evening by telling the ministers that we would show several films on the subject "Egypt As It Was In The Time of Moses". If I were a minister I would not rest until a Pathescope had been installed in my church and Sunday School. The films will tell such stories as "Betrayal of Christ by Judas" more effectively and leave a much deeper impression than a whole series of sermons.

Although we have used our machine less than three months we have found it invaluable in regular school work as well as in the work of special departments, such as school gardening, art, shop, apprentice work, manual training, domestic science etc., Yet we have hardly scrathed beneath the surface. It seems to me this work promises more for the good of our school and community than anything I have ever undertaken before.

We expect to begin a good solid year's work with the films as soon as school begins in September. The Board of Education rents the films for all the schools that have the Pathescopes. If there is anything further you would like to ask about our work here, I will be glad to answer.

Very truly yours,

H. L. Crane.

(COPY)

Cincinnati Public Schools
Office of the Superintendent
Denton Building

Seventh and Race Sts.

Community Centers and Night Schools
Civic and Vocational Service
Frank P. Goodwin, Director.

July 12th, 1919.

Mr. Leonard A. Campbell,
Bobbs-Merrill Bldg.,
Indianapolis, Indiana.

Dear Mr. Campbell:

I am in receipt of your letter of July 10th making inquiry in regard to the Pathescope moving picture machine. We have ten machines in use in the Cincinnati Public Schools at the present time and all are proving satisfactory for the purpose for which we are using them. We find that we are able to throw a very good picture for an audience as large as six hundred; the machine, however, is better for an audience of a hundred or less.

While it answers our purposes very well, you must understand that this machine cannot compare in brilliancy and illumination with the standard machine.

Yours very truly,

Frank P. Goodwin,

Director.

(COPY)

DIXON TOWNSHIP CENTRALIZED SCHOOLS.

Eaton, Ohio,

July 14, 1919.

Mr. Leonard A. Campbell,
Indianapolis, Indiana.

Dear Sir:

I purchased a Pathescope of the Sales Service Company of Cincinnati, Ohio, about April 1st.

I consider the machine to be one of the best educational devices that has been put on the market.

I bought the machine not to entertain but to instruct the children and what little time I used it, believe the influence has been good giving the children a greater vision of the world.

I got excellent results from the machine and found the managers of the Sales Service Company ever ready to assist.

Yours very truly,

(Signed) Perry Potts, Supt.